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Abstract

A computer apparatus and method for merging a sequential plurality of delta streams, wherein each delta stream represents a change to either a prior delta stream, an original data stream, or an updated data stream. The method and apparatus may be used to 1) merge a sequential plurality of delta streams with an original data stream to create an updated data stream, 2) merge a sequential plurality of delta streams to create a compiled delta stream, or 3) merge a sequential plurality of negative delta streams to retrieve a desired prior data stream. The method and apparatus may be used in conjunction with a computer backup process, version manager, or the like. In summary, a consumer process initiates a number of search requests, within a transaction chain corresponding to the sequential plurality of delta streams, for a number of data bytes to transfer to an updated data stream. The search requests may be fulfilled with data bytes provided by the last delta stream in the transaction chain capable of supplying data bytes, or if the sequential plurality of delta streams is incapable of fulfilling the search request, it may be fulfilled with data bytes provided by the original data stream. As the sequential plurality of delta streams is merged, a sequential plurality of negative delta streams may be generated, thus enabling reconstruction of a desired prior data stream.